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AKERMAN SENTERFITT P. O. BOX 3188 WEST PALM BEACH, FL 33402-3188			EXAMINER SIEDLER, DOROTHY S	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/777,263

Applicant(s)

AOKI ET AL.

Examiner

Dorothy Sarah Siedler

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-10 and 12-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

Applicant has successfully amended the drawings, therefore the objection has been withdrawn.

Applicant has successfully amended claims 13016, therefore the 35 U.S.C. 101 rejection is withdrawn.

Applicant's arguments filed September 10, 2007 have been fully considered but they are not persuasive.

Applicant argues that, "Yokogawa specifically fails to disclose or suggest that the tokens selected to be registered can be selected on the basis of attribute information", further stating that, "the preference flag is only used by Yokogawa to identify words in the token list for which to discard dictionary information, **but not to discard the words themselves**" (Remarks page 12), however the examiner respectfully disagrees. Also, it is noted that the features upon which applicant relies (i.e. discarding the words themselves) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In the instant application, claim 10 recites:

"inputting a natural language text string ..., referencing a dictionary stored in memory, obtaining tokens from said text string ..., and storing them in a work area of memory, selecting given tokens out of tokens stored in said memory on the basis of given conditions imposed on the morphological analysis and said attribute information of

the tokens and registering them on a token list formed in a given area of memory, and selecting optimum token strings for composing said natural language text to be processed out of said token strings stored in said memory and outputting them".

These limitations claim selecting tokens from an input text string based on a dictionary reference, storing those tokens in memory, then selecting tokens from those stored in work memory and registering them in another area of memory, i.e. moving selected tokens from one area of memory to another, based on a set condition. Those selected tokens are then used to create an optimum output. The selected tokens are moved from one area of memory to another, not discarded as applicant claims, since all of the tokens remain in the original area of work memory. Similarly, **Yokogawa** states, "In this embodiment, while all words, compound words or phrases starting from the cut-out position of the dictionary reference unit are taken out upon morphological analysis, dictionary information obtained for individual words constituting the compound word or the phrase judged to be a collective 'unit' in accordance with the highest preference flag are discarded. That is, the extent of coupling between the words in the sentence is judged while referring to the highest preference flag for the dictionary information obtained in the morphological analysis. Among the compound words or phrases, those judged to have strong coupling are estimated to be used as the phrase in the sentence and, if not, the possibility for the usage as the individual words is also considered in parallel" (column 13 lines 34-48). **Yokogawa** determines tokens from an input, referencing a word dictionary (Figure 3), determines selected tokens based on a set condition (the input character array is processed in terms of the highest preference flag,

and a contradiction to the highest preference flag is eliminated, column 13 lines 34-61), then determines the optimum output token string based on the preference flag (column 12 lines 17-53), as claimed in claim 10. **Yokogawa** does not explicitly disclose registering tokens in a token list except subtokens for tokens decomposable into smaller tokens, as recited in claim 15. However, **Yokogawa** does disclose considering individual words when possible compound words or phrases do not have a strong coupling (column 13 lines 34-47). In **Yokogawa**, a morphological analysis is performed on input text, and a weak or strong coupling between constituent words of compound words or phrases is determined. Using this information, a possible parse tree is determined then used for machine translation. Individual words that are constituents of determined compound words or phrases are not considered, thus reducing system processing.

The remaining arguments with respect to claims 1,5,7 and 13 have been considered, however a specific response can not be given, in light of the numerous 35 U.S.C. 112 second paragraph rejections below.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1,3,5,7,8,10, 13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites, "a dictionary unit storing header words and attribute information of the header words, said attribute information comprising at least one attribute flag", however this is ambiguous. It is unclear whether the "header words" refer to the head of a compound word, the head of a word or both, or if the dictionary is meant to store words and their morphological structure, i.e. a head and inflectional and derivational information for each word.

Claim 1 recites, "wherein said token list generating unit controls the registration of the tokens on said token list on the bases of conditions imposed on the morphological analysis", however this is ambiguous. It is unclear whether "the morphological process" refers to the step performed by the token list generating unit, where a dictionary unit is referenced to extract tokens from the input text string, or a different process, especially since it is not clear, as noted above, whether or not the dictionary unit stores morphological information for each word.

Claim 3 recites, "and wherein in response to a condition of registering only decomposing complex words being imposed on said morphological analysis, said token list generating unit references the attribute flag of said header words corresponding to said extracted tokens and registers the extracted tokens on said list except tokens corresponding to decomposable header words from said extracted tokens" however these statements create a contradiction. In the first sentence, a condition is set to register decomposable complex words in the token list, while the second sentence states that tokens are registered on a token list except tokens that are decomposable.

Claim 5 recites, "wherein said token list generation means selectively registers said tokens according to at least condition imposed on the morphological analysis", however this is ambiguous. It is unclear whether "the morphological process" refers to the steps performed by the token list generating unit, or a different process. This also renders ambiguous exactly where in the process the "condition of specifying at least one type of token to be excluded from said token list" is performed.

Claim 7 recites, "said morphological analysis means comprising: a dictionary unit storing header words and attribute information of the header words, said attribute information comprising at least one attribute flag", However this is ambiguous. It is unclear whether the "header words" refer to the head of a compound word, the head of a word or both, or if the dictionary is meant to store words and their morphological structure, i.e. a head and inflectional and derivational information for each word. To perform a morphological analysis the system would require more than just "header words".

Claim 8 recites, "and wherein in response to a condition of registering only decomposing complex words being imposed on said morphological analysis, said token list generating unit references the attribute flag of said header words corresponding to said extracted tokens and registers the extracted tokens on said token list, except tokens corresponding to subtokens" however these statements seem to create a contradiction. In the first sentence, a condition is set to register decomposable complex words in the token list, while the second sentence states that tokens are registered on a token list except tokens that are decomposable.

Claim 8 recites the limitation "subtokens" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites, "selecting given tokens out of the tokens stored in said memory,...and registering them in a given area of memory" however this is ambiguous. It is unclear if "said memory" refers to the work memory or the dictionary memory. It is also unclear if the "given area of memory" is the same as the "work memory". Claim 10 also recites, "selecting optimum token strings for composing said natural language text to be processed out of said token strings stored in said memory", however it is unclear which memory "said memory" refers to. Therefore the examiner interprets these limitations as, "selecting given tokens out of the tokens stored in said *work area* memory, ...registering them on a token list in a given *secondary area of work memory*" and "selecting optimum token strings..to be processed out of said token strings stored in said *work area of memory*". This interpretation used throughout the remainder of this office action.

Claim 13 recites limitations similar to claim 1, and is therefore rejected for similar reasons.

Claim 15 recites limitations similar to claim 10, and is therefore rejected for similar reasons.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the



art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6, 9, 15 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 6 recites, "wherein said condition specifies whether or not subtokens from tokens decomposable into smaller tokens are to be excluded from said token list", however "subtokens" are not disclosed in the specification.

Claim 9 recites, "wherein the attribute information comprises a plurality of attribute flags corresponding to a plurality of different attributes for said header word", however this limitation is not disclosed in the specification.

Claim 15 recites, "registering said tokens by said token group in a token list formed in a given area of the memory except subtokens for tokens decomposable into smaller tokens" however "subtokens" are not disclosed in the specification.

Claim 16 recites, "imposing at least other one condition on the morphological analysis", "analyzing said tokens using the other conditions imposed on the morphological analysis" and "instead of registering said tokens by said token group, registering only tokens in said token list in accordance with said other imposed condition", however these limitations are not disclosed in the specification.

In light of the numerous 112 rejections stated above, claims 1-16 are interpreted in terms of the prior art, identified below.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4,7-10,13,14 are rejected under 35 U.S.C. 102(b) as being anticipated by ***Yokogawa*** (5,225,981).

As per claims 1,7,10 and 13 ***Yokogawa*** discloses a morphological analyzer for performing a morphological analysis on a natural language text to be processed, comprising:

a dictionary unit storing header words and attribute information of the header words, said attribute information comprising at least one attribute flag (column 12 lines 23-37, *a word dictionary stores grammatical information for each entry word, including inflectional information, as well as a highest preference flag*);

a token list generating unit for referencing data in said dictionary unit, extracting tokens that can form natural language text from said input text string, and registering said extracted tokens in a token list (column 10 lines 44-55 and column 12 lines 1-15, a

*morphological analysis section processes the sentence by referring to the word dictionary, this analysis saved in the retrieved dictionary buffer); and*

a token string selecting unit for selecting optimum token strings for composing said natural language text on the basis of the token list generated by said token list generating unit, wherein said token list generating unit controls the registration of the tokens on said token list on the basis of conditions imposed on the morphological analysis and said attribute flag of the header words corresponding to said extracted tokens, wherein said token list generating unit registers in said token list only the extracted tokens having said attribute flag matching said conditions imposed on the morphological analysis (column 10 line 67 – column 11 line 5 and column 13 lines 34-37 and lines 49-61, *the input character array is processed in terms of the highest preference flag (imposed condition), then a contradiction for the highest preference flag is eliminated; next, the input data and the dictionary information are sent to the parsing section I and then II, where structure is applied to the data to determine a solution, or a parse tree*).

As per claim 3, **Yokogawa** discloses the morphological analyzer according to claim 1, wherein said attribute flag indicates whether or not said header words are decomposable, and wherein in response to a condition of registering only decomposing complex words being imposed on said morphological analysis, said token list generating unit references the attribute flag of said header words corresponding to said tokens and

registers the extracted tokens on said token list, except tokens corresponding to individual words (column 12 lines 23-37 and column 13 lines 34-37, *the word dictionary contains an entry for a highest preference flag, which uses a '1' or '0' to indicate weak or strong coupling (decomposable). This is used to determine the compound word or phrase used in the sentence).*

As per claims 4,9 and 14, **Yokogawa** discloses the morphological analyzer according to claims 1,7 and 13, wherein the attribute information comprises a plurality of attribute flags corresponding to a plurality of different attributes for said header words, wherein said token list generating unit registers in said token list only the extracted tokens having said attribute flags matching said conditions imposed on the morphological analysis (column 12 lines 23-37 and column 13 lines 34-37, *the word dictionary contains an entry for a highest preference flag, which uses a '1' or '0' to indicate weak or strong coupling, as well as additional information such as part of speech and countability or uncountability. In addition, the input character array is processed in terms of the highest preference flag (imposed condition), then a contradiction for the highest preference flag is eliminated).*

As per claim 8, **Yokogawa** discloses the natural language processor according to claim 7, wherein said attribute flag indicates whether or not said header words are decomposable, and wherein in response to a condition of registering only composing

complex words being imposed on said morphological analysis by said application execution means, said token list generating unit references the attribute flag of said header words corresponding to said extracted tokens and registers the extracted tokens on said extracted on said token list, except tokens corresponding to subtokens (column 12 lines 23-37 and column 13 lines 34-37, *the word dictionary contains an entry for a highest preference flag, which uses a '1' or '0' to indicate weak or strong coupling (decomposable). The input character array is processed in terms of the highest preference flag (imposed condition), then a contradiction for the highest preference flag is eliminated*).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 6, 12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokogawa**.

As per claims 5, 12 and 15, **Yokogawa** discloses a morphological analyzer for performing a morphological analysis on a natural language text to be processed, comprising: token list generation means for decomposing an input text string to be

processed into tokens that are components of the natural language text and selectively registering said tokens in a token list (column 10 lines 44-55, *a morphological analysis section derives the sentence by referring to the word dictionary. During this analysis, the input character array is processed in terms of the highest preference flag (imposed condition), then a contradiction for the highest preference flag is eliminated*) and token string selection means for selecting optimum token strings for composing said natural language text on the basis of the token list generated by said token list generation means, wherein said token list generating means selectively registers said tokens according to at least one condition imposed on the morphological analysis, said condition specifying at least one type of token to be excluded from said token list (column 10 line 67 – column 11 line 5 and column 13 lines 34-37, *the input character array is processed in terms of the highest preference flag (imposed condition), then a contradiction for the highest preference flag is eliminated. After the morphological analysis, the input data and the dictionary information are sent to the parsing section I and then II, where structure is applied to the data to determine a solution, or a parse tree*). **Yokogawa** does not explicitly disclose registering tokens except tokens decomposable into smaller tokens. However, **Yokogawa** does disclose considering individual words when possible compound words or phrases do not have a strong coupling (column 13 lines 34-47). In **Yokogawa**, a morphological analysis is performed on input text, and a weak or strong coupling between constituent words of compound words or phrases is determined. Using this information, a possible parse tree is determined then used for machine translation. Individual words that are constituents of

determined compound words or phrases are not considered, thus reducing the processing.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to register tokens except tokens corresponding to decomposable header words from said extracted tokens in **Yokogawa**, since it would enable the system to discard words or phrases with weak coupling, i.e. words or phrases that are not likely to be correct compound words or phrases, thus reducing system processing.

As per claim 6, **Yokogawa** discloses the morphological analyzer according to claim 5, however **Yokogawa** does not explicitly disclose wherein said condition specifies whether or not subtokens from tokens decomposable into smaller tokens are to be excluded from said token list. However, **Yokogawa** does disclose considering individual words when possible compound words or phrases do not have a strong coupling (column 13 lines 34-47). In **Yokogawa**, a morphological analysis is performed on input text, and a weak or strong coupling between constituent words of compound words or phrases is determined. Using this information, a possible parse tree is determined then used for machine translation. Individual words that are constituents of determined compound words or phrases are not considered, thus reducing the processing.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to selectively control whether or not tokens decomposable into smaller tokens are excluded from tokens registered on said token list in accordance with

conditions composed on the morphological analysis in **Yokogawa**, since it would enable the system to discard words or phrases with weak coupling, i.e. words or phrases that are not likely to be correct compound words or phrases, thus reducing system processing.

As per claim 16, **Yokogawa** discloses the program according to claim 15, further comprising code sections for: imposing at least other one condition on the morphological analysis, analyzing said tokens using the other conditions imposed on the morphological analysis, and instead of registering said tokens by said token group, registering only said tokens in said token list in accordance with said other imposed conditions (column 12 lines 23-37 and column 13 lines 34-37, *the word dictionary contains an entry for a highest preference flag, which uses a '1' or '0' to indicate weak or strong coupling (decomposable). Also, if a strong coupling does not exist between possible compound words or phrases, individual words are considered (indecomposable words).*).

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dorothy Sarah Siedler whose telephone number is 571-270-1067. The examiner can normally be reached on Mon-Thur 9:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 571-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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DSS

  
RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER